Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for executing instructions in a data processing system, comprising:

associating one or more instructions of a computer program with one or more performance indicators;

storing the one or more performance indicators in one or more performance indicator fields of a page table;

initiating one or more counter fields in the page table for the one or more instructions in association with corresponding performance indicators of the one or more performance indicators;

incrementing counter values in the one or more counter fields during execution of an instruction of the computer program based on whether the instruction has an associated performance indicator in a performance indicator field of the page table; [[and]]

storing one or more threshold values in one or more threshold fields of the page table in association with the one or more performance indicator fields and the one or more counter fields, wherein each of the one or more threshold values specifies a maximum counter value in an associated counter field; and

generating a selected action in response to the counter value in an associated counter field exceeding the threshold value in an associated threshold field.

2. (Currently amended) The method of claim 1, wherein incrementing counter values in the one or more counter fields during execution of an instruction includes:

determining if an event associated with a performance indicator stored in the one or more performance indicator fields has occurred; and

incrementing [[a]] the counter value in ~~a corresponding~~ the associated counter field of the one or more counter fields if the event has occurred.

3. (Currently amended) The method of claim [[1]] 2, wherein the event is a cache miss.

4. (Canceled)

5. (Currently amended) The method of claim 1, further comprising:

upon the occurrence of an event, comparing one or more counter values in the one or more counter fields to a threshold value in the one or more threshold fields[[;]], and wherein generating a selected action in response to the counter value in an associated counter field exceeding the threshold value in an associated threshold field, comprises:

generating an interrupt in response to the counter value in the associated counter field exceeding the threshold value in the associated threshold field ~~if a predetermined relationship between the one or more values in the one or more counter fields and the threshold value is present~~.

6. (Currently amended) The method of claim 1, further comprising:

receiving an access request for portion of code or portion of data, wherein the access request includes an identifier of a virtual address of the portion of code or portion of data;

converting the virtual address to a real address of a storage location of the portion of code or portion of data in a storage device;

accessing the portion of code or portion of data via using the real address; and

determining whether an event has occurred during the accessing of the portion of code or portion of data, wherein incrementing the counter values in the one or more counter fields is performed in response to a determination that the event has occurred during the access of the portion of code or portion of data.

7. (Original) The method of claim 1, wherein associating one or more instructions of a computer program with one or more performance indicators includes associating the one or more performance indicators with a virtual and a real addresses of the one or more instructions in the page table.

8. (Currently amended) A computer program product in a computer readable medium for executing instructions in a data processing system, comprising:

first instructions for associating one or more instructions of a computer program with one or more performance indicators;

second instructions for storing the one or more performance indicators in one or more performance indicator fields of a page table;

third instructions for initiating one or more counter fields in the page table for the one or more instructions in association with corresponding performance indicators of the one or more performance indicators;

fourth instructions for incrementing counter values in the one or more counter fields during execution of an instruction of the computer program based on whether the instruction has an associated performance indicator in a performance indicator field of the page table; [[and]]

fifth instructions for storing one or more threshold values in one or more threshold fields of the page table in association with the one or more performance indicator fields and the one or more counter fields, wherein each of the one or more threshold values specifies a maximum counter value in an associated counter field; and

sixth instructions for generating a selected action in response to the counter value in an associated counter field exceeding the threshold value in an associated threshold field.

9. (Currently amended) The computer program product of claim 8, wherein the fourth instructions for incrementing counter values in the one or more counter fields during execution of an instruction include:

instructions for determining if an event associated with a performance indicator stored in the one or more performance indicator fields has occurred; and

instructions for incrementing [[a]] the counter value in ~~a corresponding~~ the associated counter field of the one or more counter fields if the event has occurred.

10. (Currently amended) The computer program product of claim [[8]] 9, wherein the event is a cache miss.

11. (Canceled)

12. (Currently amended) The computer program product of claim 8, further comprising:

[[sixth]] seventh instructions for comparing, upon the occurrence of an event, one or more counter values in the one or more counter fields to a threshold value in the one or more threshold fields[[;]], and wherein the sixth instructions comprises:

~~seventh~~ instructions for generating an interrupt in response to the counter value in the associated counter field exceeding the threshold value in the associated threshold field ~~if a predetermined relationship between the one or more values in the one or more counter fields and the threshold value is present~~.

13. (Currently amended) The computer program product of claim 8, further comprising:

[[sixth]] seventh instructions for receiving an access request for portion of code or portion of data, wherein the access request includes an identifier of a virtual address of the portion of code or portion of data;

~~seventh~~ eighth instructions for converting the virtual address to a real address of a storage location of the portion of code or portion of data in a storage device;

~~eighth~~ ninth instructions for accessing the portion of code or portion of data via using the real address; and

[[ninth]] tenth instructions for determining whether an event has occurred during the accessing of the portion of code or portion of data, wherein incrementing the counter values in the one or more counter fields is performed in response to a determination that the event has occurred during the access of the portion of code or portion of data.

14. (Original) The computer program product of claim 8, wherein the first instructions for associating one or more instructions of a computer program with one or more performance indicators include instructions for associating the one or more performance indicators with a virtual and a real addresses of the one or more instructions in the page table.

15. (Currently amended) An apparatus for executing instructions in a data processing system, comprising:

means for associating one or more instructions of a computer program with one or more performance indicators;

means for storing the one or more performance indicators in one or more performance indicator fields of a page table;

means for initiating one or more counter fields in the page table for the one or more instructions in association with corresponding performance indicators of the one or more performance indicators;

means for incrementing counter values in the one or more counter fields during execution of an instruction of the computer program based on whether the instruction has an associated performance indicator in a performance indicator field of the page table; [[and]]

means for storing one or more threshold values in one or more threshold fields of the page table in association with the one or more performance indicator fields and the one or more counter fields, wherein each of the one or more threshold values specifies a maximum counter value in an associated counter field; and

means for generating a selected action in response to the counter value in an associated counter field exceeding the threshold value in an associated threshold field.

16. (Currently amended) The apparatus of claim 15, wherein the means for incrementing counter values in the one or more counter fields during execution of an instruction includes:

means for determining if an event associated with a performance indicator stored in the one or more performance indicator fields has occurred; and

means for incrementing [[a]] the counter value in ~~a corresponding~~ the associated counter field of the one or more counter fields if the event has occurred.

17. (Currently amended) The apparatus of claim [[15]] 16, wherein the event is a cache miss.

18. (Canceled)

19. (Currently amended) The apparatus of claim 15, further comprising:

means for comparing, upon the occurrence of an event, one or more counter values in the one or more counter fields to a threshold value in the one or more threshold fields[[;]], and wherein the means for generating a selected action in response to the counter value in an associated counter field exceeding the threshold value in an associated threshold field, comprises:

means for generating an interrupt in response to the counter value in the associated counter field exceeding the threshold value in the associated threshold field ~~if a predetermined relationship between the one or more counter values in the one or more counter fields and the threshold value is present~~.

20. (Currently amended) The apparatus of claim 15, further comprising:

means for receiving an access request for portion of code or portion of data, wherein the access request includes an identifier of a virtual address of the portion of code or portion of data;

means for converting the virtual address to a real address of a storage location of the portion of code or portion of data in a storage device;

means for accessing the portion of code or portion of data via using the real address; and

means for determining whether an event has occurred during the accessing of the portion of code or portion of data, wherein incrementing the counter values in the one or more counter fields is performed in response to a determination that the event has occurred during the access of the portion of code or portion of data.

21. (New) A method for monitoring instructions in a data processing system, comprising:

associating one or more instructions of a computer program with one or more performance indicators;

storing the one or more performance indicators in one or more performance indicator fields of a page table;

initiating one or more counter fields in the page table for the one or more instructions in association with corresponding performance indicators of the one or more performance indicators;

determining if a cache miss associated with a performance indicator stored in the one or more performance indicator fields has occurred during execution of an instruction of the computer program;

incrementing a counter value in an associated counter field of the one or more counter fields responsive to determining that the cache miss has occurred during the execution of the instruction of the computer program;

storing one or more threshold values in one or more threshold fields of the page table in association with the one or more performance indicator fields and the one or more counter fields, wherein each of the one or more threshold values specifies a maximum counter value in an associated counter field;

generating an interrupt in response to the counter value in an associated counter field exceeding the threshold value in an associated threshold field; and

sending information to a monitoring program responsive to a determination that monitoring of instructions is to end, and responsive to an associated counter field of the one or more counter fields exceeding the threshold value in an associated threshold field of one or more threshold fields.